



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/590,750

08/25/2006

Mridula Kapur

63500A

4399

109 7590 03/31/2011

The Dow Chemical Company

P.O. BOX 1967

2040 Dow Center

Midland, MI 48641

EXAMINER

LENIHAN, JEFFREY S

ART UNIT

PAPER NUMBER

1765

NOTIFICATION DATE

DELIVERY MODE

03/31/2011

ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

FFUIMPC@dow.com

Office Action Summary	Application No. 10/590,750	Applicant(s) KAPUR ET AL.	
	Examiner Jeffrey Lenihan	Art Unit 1765	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 January 2010.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,3-5 and 8-16 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,3 and 4 is/are rejected.
- 7) ☐ Claim(s) 5 and 8-16 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. This Office Action is responsive to the amendment filed on 1/14/2010.
2. The objections and rejections not addressed below are deemed withdrawn.
3. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office Action.

Continued Examination Under 37 CFR 1.114

4. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 1/14/2010 has been entered.

Claim Rejections - 35 USC § 103

5. Claims 1, 3, and 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lai et al, US5408004.
6. Lai discloses a film (for claim 1) (Column 5, lines 34-39) prepared from a polyolefin blend comprising at least 10% by weight (for claim 1) of a low melting component and , by extension, up to 90% by weight of a second polyolefin component (abstract; Column 2, lines 15-32; Column 6, lines 54-58). Said low melting component may be a substantially linear homogeneously branched ethylene homopolymer (for

Art Unit: 1765

claims 4) (Column 4, lines 22-24; Column 6, lines 58-61) having a density in the range of 0.850 to 0.960 g/cm³ (Column 4, line 35), a polydispersity index in the range of 1.5 to 2.5 (Column 4, lines 40-46), and a melt index in the range of 0.5 to 20 g/10 min (Column 6, lines 16-18); corresponding to claimed component (A) (for claim 1). Said second polyolefin component may be a high density polyethylene (HDPE) (for claim 4) having density in the range of .941 to 0.965 g/cm³ (Column 3, lines 8-14; Column 6, line 68 to Column 7, line 2). The incorporated by reference patent (Column 3, lines 36-42) to Tabor, US4950541 teaches that such HDPE are typically characterized by a melt index in the range of 0.1 to 2000 g/10 min (Column 3, lines 33-43). Said HDPE therefore corresponds to claimed component (B) (for claim 1).

7. It has been held that in the case where the claimed ranges overlap or lie inside ranges disclosed in the prior art, a *prima facie* case of obviousness exists; see *In re Wertheim*, 541 F.2d 257, 191 USPQ 90 (CCPA 1976); *In re Woodruff*, 919 F.2d 1575, 16 USPQ2d 1934 (Fed. Cir. 1990) (MPEP § 2144.05). Barring a showing of factual evidence demonstrating unexpected results, it therefore would have been obvious to one of ordinary skill in the art at the time the invention was made to prepare a blend comprising the claimed components in view of the teachings of Lai.

8. Regarding the property of WVTR (for claim 3): A chemical composition and its properties are inseparable. Therefore, if the prior art teaches the identical chemical structure, the properties applicant discloses and/or claims are necessarily present; see *In re Spada*, 911 F.2d 705, 709, 15 USPQ2d 1655, 1658 (Fed. Cir. 1990). As discussed above, Lai teaches the production of a film from a polyolefin blend which

comprises the same polymer components combined in similar amounts as the claimed invention; it is therefore reasonably expected that the properties of the prior art film would necessarily be the same as claimed and inherently be not materially different from those of the claimed invention. The burden is therefore shifted to applicant to provide evidence of an unobvious difference between the claimed invention and the prior art.

9. Claims 1, and 3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rowland et al, US6114486.

10. Claims 1 and 3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rowland et al, US6689851.

11. The examiner notes that US6689851 is a divisional of US6114486; the disclosures of the two documents are therefore identical. The claims are rejected over each reference per the following rationale; citations are made with respect to US6114486.

12. Rowland discloses a composition comprising 1 to 99% by weight of a rheology-modified polymer and 1 to 99% by weight of a second polymer component (Column 21, lines 46-52), wherein said composition is used in the production of films (for claim 1) (Column 19, lines 1-2). Said rheology-modified polymer may be a homogeneous ethylene polymer (Column 7, lines 20-24) having a polydispersity index ≤ 3 (Column 6, lines 3-6), a melt index of 0.1 to 100 g/10 min (Column 10, lines 12-17), and a density of 0.850 to 0.950 g/cm³ (Column 12, lines 36-40), corresponding to claimed component (A) (for claim 1). Said second polymer may be a HDPE having a density of 0.941 to

Art Unit: 1765

0.965 g/cm³ (Column 20, lines 49-55). The incorporated by reference patent (Column 21, lines 21-25) to Tabor, US4950541 teaches that such HDPE are typically characterized by a melt index in the range of 0.1 to 2000 g/10 min (Column 3, lines 33-43). Said HDPE therefore corresponds to claimed component (B) (for claim 1).

13. Regarding the property of WVTR (for claim 3): Jacobsen teaches the production of a film from a polyolefin blend which comprises the same polymer components combined in similar amounts as the claimed invention; it is therefore reasonably expected that the properties of the prior art film would necessarily be the same as claimed and inherently be not materially different from those of the claimed invention. Per the reasons outlined in paragraph 8 above, the burden is therefore shifted to applicant to provide evidence of an unobvious difference between the claimed invention and the prior art.

14. Claims 1 and 3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jacobsen, WO 97/43323.

15. Jacobsen discloses a blend composition (Page 70, lines 16-21) comprising 1 to 99% by weight of a first ethylene copolymer (page 71, lines 2-5), and 1 to 99% by weight of a homogeneous ethylene/olefin interpolymer (page 78, line 26 to page 79, line 3). Said homogeneous ethylene/olefin interpolymer is characterized by a density of 0.915 to 0.985 g/cm³ (page 79, lines 4-7), a melt index of 0.0001 to 10000 g/10 min (page 79, lines 8-11), and a polydispersity index less than 3 (page 79, lines 19-22); corresponding to claimed component (A) (for claim 1). Said first ethylene copolymer is characterized by a density of 0.870 to 980 g/cm³ (page 71, lines 6-9) and a melt index

of 0.0001 to 10000 g/10 min (page 71, lines 10-13), corresponding to claimed component (B) (for claim 1). Said blend composition may be used for the production of films (for claim 1) (page 2, lines 2-6).

16. Regarding the property of WVTR (for claim 3): Jacobsen teaches the production of a film from a polyolefin blend which comprises the same polymer components combined in similar amounts as the claimed invention; it is therefore reasonably expected that the properties of the prior art film would necessarily be the same as claimed and inherently be not materially different from those of the claimed invention. Per the reasons outlined in paragraph 8 above, the burden is therefore shifted to applicant to provide evidence of an unobvious difference between the claimed invention and the prior art.

17. Claims 1 and 3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Van Dun et al, US2003/0149180.

18. Van dun discloses a polyethylene composition comprising a low molecular weight (LMW) ethylene homopolymer and a high molecular weight (HMW) ethylene interpolymers (abstract). Said composition comprises 35 to 65% by weight of said HMW interpolymers, which is a homogeneous polymer (abstract) characterized by a melt index in the range of 0.001 to 0.1 g/10 min (¶0034), a density of 0.905 to 0.955 g/cm³ (¶0036), and a polydispersity index most preferably in the range of 1.5 to 4 (¶0038); corresponding to claimed component (A) (for claim 1). Said LMW homopolymer is present in the composition in an amount ranging from 35 to 65% by weight, and is

characterized by a density greater than 0.960 g/cm^3 and a melt index of 30 to 2000 g/10 min ($\text{¶}0033$), corresponding to claimed component (B) (for claim 1). Said composition is used in the production of films (for claim 1) ($\text{¶}0111$).

19. Regarding the property of WVTR (for claim 3): Van Dun teaches the production of a film from a polyolefin blend which comprises the same polymer components combined in similar amounts as the claimed invention; it is therefore reasonably expected that the properties of the prior art film would necessarily be the same as claimed and inherently be not materially different from those of the claimed invention. Per the reasons outlined in paragraph 8 above, the burden is therefore shifted to applicant to provide evidence of an unobvious difference between the claimed invention and the prior art.

Response to Arguments

20. Applicant's arguments, see page 5 and the declaration of M. Kapur, filed 1/14/2010, with respect to the use of a heterogeneously branched polyethylene in Bailey have been fully considered and are persuasive. The rejection of claims over Bailey has been withdrawn.

21. Applicant's arguments, see pages 6-7, filed 1/14/2010, with respect to the rejection of claims over Moriguchi have been fully considered and are persuasive.

22. The examiner disagrees with applicant's statement that the previous Office Action stated that the Bailey's disclosure of a molecular weight distribution (M_w/M_n) "less than 10" includes all values down to zero and even negative values. The previous Office Action merely stated that the prior art range "less than 10" overlaps the claimed

Art Unit: 1765

range of 1.5 to 3. It is known in the art of polymer chemistry that M_w/M_n for a polymer is 1 or greater.

23. Regarding the allegedly unexpected results obtained from the invention of claim 1: Applicant can rebut a prima facie case of obviousness by showing that there are new or unexpected results relative to the prior art; see *Iron Grip Barbell Co., Inc. v. USA Sports, Inc.*, 392 F.3d 1317, 1322, 73 USPQ2d 1225, 1228 (Fed. Cir. 2004). Applicant attributes the allegedly unexpected results to the use of a homogeneously branched polymer having M_w/M_n in the claimed range of 1.5 to 3. As discussed above, the applied references to Lai, Rowland, Jacobsen, and Van Dun all explicitly recite the use of homogeneous ethylene polymers having M_w/M_n in the claimed range. Applicant's comparative data, based on a heterogeneously branched comparative polymer, does not demonstrate that the allegedly unexpected results are obtained relative to the prior art.

Allowable Subject Matter

24. Claims 5 and 8-16 are allowed.

25. The following is a statement of reasons for the indication of allowable subject matter: The closest prior art of record is Moriguchi et al, US4536550. Moriguchi discloses a composition comprising 1) a polyethylene (A) having weight average molecular weight (M_w) in the range of 5000 to 90000, 2) a polyethylene (B) having M_w in the range of 50000 to 500000, and 3) a polyethylene (C) having M_w in the range of 100000 to 1500000. The prior art does not teach nor does it fairly suggest the improved properties of water vapor transmission obtained from a composition defined by the

Art Unit: 1765

claimed combination of limitations of fractions of molecular weights ≤ 10000 and ≥ 1000000 .

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jeffrey Lenihan whose telephone number is (571)270-5452. The examiner can normally be reached on Monday through Thursday from 7:30-5:00 PM, and on alternate Fridays from 7:30-4:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, James J. Seidleck can be reached on 571-272-1078. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 1765

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/ Irina S. Zemel/
Primary Examiner, Art Unit 1765

/Jeffrey Lenihan/
Examiner, Art Unit 1765

/JL/